

Abstract Submitted
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Formation of metallic periodic nanostructures by spontaneous oscillation in self-organized electrocrystallization MU WANG, RUWEN PENG, GUOBIN MA, XIPING HAO, NAIBEN MING, Dept. Phys., Nanjing University — A unique electrodeposition system is designed to self-organize metallic periodic nanostructures on the surface of solid substrate, which consists of an ultrathin electrolyte layer about 300 nm in thickness. In this system the metal electrodeposits (copper, cobalt, zinc and silver) are formed robustly on the solid substrate (silicon wafer or glass plate), possess considerably low branching rate, and usually cover with periodic metal/metal oxide nano-nodules. Both potentiostatic and galvanostatic modes can be applied to generate such structures. Following issues are focused in this presentation: (1) The mechanism for the formation of the periodic nanostructures on the filaments; (2) The experimental conditions to control the periodicity of these periodic spatio-temporal structures; (3) The electric properties of this nano-nodules chains.

References:

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